



Water quality self-assessment

A preliminary guide for testing school water quality

Answer the following questions to determine if sampling for lead is necessary at your school.

1. Does the school supply its own water? (e.g., from a well)
 - a. Yes. **Go to 2.**
 - b. No. **Skip to 7.**
2. Your school is a non-transient, non-community water system that must comply with the Lead and Copper Rule under the Safe Drinking Water Act. Your system collects water quality data as part of its compliance activities. **Look at the most recent lead tests. Were they:**
 - a. Less than or equal to 0.015 mg/L (15 parts per billion)? **Go to 3.**
 - b. Greater than 0.015 mg/L (15 parts per billion)? **Skip to 6.**
3. Your school's lead results are lower than the action level set by the Lead and Copper Rule for the water system as a whole. **To confirm your water is not overly corrosive, look at the most recent tests for copper, too. Were they:**
 - a. Less than or equal to 1.3 mg/L (1,300 part per billion)? **Go to 4.**
 - b. Greater than 1.3 mg/L (1,300 parts per billion)? **Go to 5.**
4. Recent tests indicate neither lead nor copper is a problem for the water system as a whole. Generally, this means the water in the system is not particularly corrosive. As long as on-going sampling requirements are met, your water system is in compliance with the Lead and Copper Rule. **Because lead is of particular concern for young children – and can be a building-specific problem – eliminate the possibility that individual water taps in your building(s) could have elevated lead levels.**

To rule out localized hot spots, consider limited lead-testing that focuses on high traffic faucets and fountains used for drinking or cooking. This type of testing uses a different sample protocol than the Lead and Copper Rule. Since the water system as a whole is in compliance with the rule, mark these additional samples with a sampling purpose of “investigative” so they do not interfere with required testing. Check with the laboratory doing the analysis to ensure they are documented correctly.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for high traffic outlets** on page 6.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

5. **Copper results greater than 1.3 mg/L indicate the water in your system is corrosive enough to cause copper or lead to leach from the plumbing.** The Lead and Copper Rule (LCR) requires water systems to manage the corrosive nature of the water in their systems. Your water system must develop a Corrosion Control Plan (CCP). While the system is working on its CCP, the water is still corrosive and there may be outlets in your school with elevated lead or copper levels.

Because lead is of particular concern for young children, consider limited lead testing to rule out the risk of localized hot spots. EPA recommends a lead level of no more than 0.020 mg/L at individual water taps.

Limited lead-testing focuses on high traffic faucets and fountains that may be used for drinking or cooking. Since this type of testing uses a different sample protocol than the LCR, mark these samples with a sampling purpose of “investigative.” Check with the laboratory doing the analysis to ensure they are documented correctly, and discuss them with your water system operator so the results will not interfere with the system’s corrosion control activities.



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6. **Lead concentrations over 0.015 mg/L indicate a potential lead exposure problem.** Generally, this means the water in your system and buildings is corrosive enough to cause lead to leach from the plumbing into the water supply. The Lead and Copper Rule (LCR) requires water systems to manage the corrosive nature of the water in their systems. Your water system must develop a Corrosion Control Plan (CCP). While the system is working on its CCP, the water is still corrosive and there may be outlets in your school with elevated lead or copper levels.

Because lead is of particular concern for young children, conduct additional sampling for lead at all water outlets that could be used for drinking or cooking. Since this sampling is not required by the LCR, mark the samples with a sampling purpose of “investigative.” Check with the laboratory doing the analysis to ensure the samples are documented correctly, and discuss them with your water system operator so the results will not interfere with the system’s corrosion control activities.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for all drinking water outlets** on page 7.

7. **Though there is no requirement to test individual school fountains and faucets for lead, the federal government passed the 1988 Lead Contamination Control Act (LCCA) to help schools identify and reduce lead in drinking water.** The LCCA and the U.S. Environmental Protection Agency recommend schools test their water for lead. If testing is done, the LCCA requires schools to make the results available to the public. The act also identifies plumbing fixtures, coolers and fountains that contain lead; bans the further use of these fixtures and recommends their replacement. (See **Resources** on page 8.)

Has your school ever tested its tap water for lead?

- a. Yes. **Get a copy of the test results and go to 8.**
 - b. No. **Skip to 16.**
8. **How many samples were taken?**
- a. Few locations were sampled. **Go to 16.**
 - b. All or most locations were sampled (including sinks). **Go to 9.**
9. **Were samples taken where people typically drink the water?** (Water bubblers, coolers, kitchen faucets, nurse's office sink, etc.)
- a. Yes. **Go to 10.**
 - b. No. **Skip to 19.**
10. **Was sampling done in accordance with guidance from EPA or the Office of Drinking Water?**
- a. Yes. **Go to 11.**
 - b. No. **Skip to 19.**
11. **Were any results greater than 20 parts per billion (0.020 mg/L)?**
- a. Yes. **Go to 13.**
 - b. No. **Go to 12.**
12. **The data suggest little or no immediate risk of lead exposure from your building plumbing. However, if the information is not recent, consider re-sampling because conditions in buildings can change over time.** It may be useful to consider limited lead testing that focuses on high traffic faucets and fountains that may be used for drinking or cooking.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for high traffic outlets** on page 6.

13. **Were the samples collected in the last 12 months?**
- a. Yes. **Go to 14.**
 - b. No. **Go to 15.**
14. **The data indicate you have faucets and fountains that exceed EPA's recommended lead level for individual taps. Follow-up samples from each water outlet that exceeds the EPA level are recommended.** EPA and the Office of Drinking Water (ODW) have developed guidance for schools on initial and follow-up sampling. (See **Resources** on page 8.)

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for all drinking water outlets** on page 7.

- 15. The data indicate you have faucets and fountains that exceed EPA's recommended lead level for individual taps. EPA recommends retesting all taps with initial results greater than 0.020 mg/L. However, since your samples are more than a year old, consider re-sampling the taps in excess of the limit as well as other sites before proceeding with follow-up sampling.**

Conditions in the building(s), the quality of the water, and the use of these sites will change over time. Re-sampling will give you updated information to use in determining the need for follow-up monitoring. Since your old samples indicated elevated lead levels, consider sampling for lead at all the outlets that could be used for drinking or cooking. Repeat this self-assessment after you have re-sampled and have the new results.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for all drinking water outlets** on page 7.

- 16. EPA recommends schools and day care facilities test their drinking water for lead. You have only limited direct water quality information, but there are indirect sources of information you can use to determine the need for lead testing at your school.**

To get recent water quality information, ask your water system for a copy of its Consumer Confidence Report and recent sampling data. The water system can also describe its status under the Lead and Copper Rule, how it is managing corrosion, and the quality of the water as it enters your building. It will be important to compare this with any sample results you collect in your building(s).

Consider the following questions related to your school building(s) and the water system:

School building(s)	Water system
Do any faucets or fountains get green, orange or brown stains?	Is the service connector a lead pipe?
Have there been complaints about taste, odor, or color?	Does the water have a low pH?
Is there a metallic taste to the water?	Did my water system exceed the action level for lead or copper?
Is there lead solder in the building (common before 1991)?	Does my water system have a corrosion control plan?
Are any appliances or mechanical devices grounded to the water supply pipes?	Do recent sample results show: - Cadmium greater than 0.005 mg/L - Iron greater than 0.3 mg/L - Manganese greater than 0.05 mg/L - Zinc greater than 5 mg/L

- If you answer yes to any of these questions, **Go to 17.**
- If you answer no to all of these questions, **Go to 18.**

- 17. There is evidence the water in your building may be corrosive. The combination of water system characteristics and building plumbing conditions may create lead and other water quality hot spots.** Because lead is of particular concern for young children, you should sample for lead at all the outlets that could be used for drinking or cooking.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for all drinking water outlets** on page 7.

- 18. Though there are few obvious indications the water is corrosive, you have very little direct information about the water quality in your building to use in determining the need for testing.** Because lead is of particular concern for young children – and can be a building-specific problem – eliminate the possibility that individual water taps in your building(s) could have elevated lead levels.

To rule out localized lead hot spots, consider limited lead-testing that focuses on high traffic faucets and fountains that may be used for drinking or cooking.

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for high traffic outlets** on page 6.

- 19.** Your sampling results may not accurately reflect the risk of lead from drinking water. Additional samples are recommended from faucets and fountains used for drinking and cooking, especially if your students include young children. Prioritize your initial sampling by focusing on high traffic water taps. By examining those results first, you can assess the potential for lead hot spots in your school. (See **Resources** on page 8.)

You have completed the self-assessment. Sampling is recommended. Go to the **Initial sampling protocol for high traffic outlets** on page 6.



Initial sampling protocol for high traffic outlets

Your responses to the self-assessment indicate the general risk for lead contamination in your school drinking water is low. You did not identify obvious signs that suggest highly-corrosive water. However, the only way to be certain lead is not a problem in your building is to do some testing.

This **initial sampling protocol for high traffic outlets** is based on the following assumptions:

1. Water samples taken from high traffic areas of a school will reflect the most likely fountains, coolers, bubblers, and faucets used for cooking or drinking (particularly those used by the youngest students).
2. Not all faucets, fountains, taps and outlets where water might be obtained need to be sampled. A representative subset is sufficient to assess general lead contamination risk.
3. If test results from these high traffic areas indicate there are outlets with results over 20 parts per billion (0.020 mg/L), additional locations will be considered and the sampling plan modified accordingly.
4. Initial sample sites with results over 0.020 mg/L for lead will be re-sampled.

The U.S. Environmental Protection Agency (EPA) recommends sampling every tap that could be used for drinking water or cooking, and that any tap with results over 0.020 mg/L for lead be retested. EPA's guidance on developing a sampling plan and how to collect samples from various types of outlets is in **3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance** (See **Resources** on page 8.)

Testing is the only way to determine if a tap exceeds EPA's recommended level for lead. The difference between EPA's recommendations and this sampling protocol is the number of sample sites selected. You will not be sampling all possible sites.

Develop a sampling plan

It is critical that your sampling plan follows EPA's guidance. It should identify possible sample sites and a way to select actual sample sites based on the traffic and use patterns at your school.

For example, if you identify 20 high traffic fountains and faucets, focus on the most obvious sources of drinking water for young children and include at least one site used for food preparation. You may decide to sample only 10 of the original 20. If any of the initial samples contain lead over 0.020 mg/L, however, consider sampling additional locations where drinking water can be obtained.

As you develop your sampling plan, evaluate the need to test for other compounds. The self-assessment focuses on lead because it poses the highest risk for young children. However, other compounds could cause water quality issues at your school.

Answer the following questions:

- 1) Do any outlets or faucets in the building get green, orange or brown stains?
- 2) Have there been complaints about taste, odor, or color?
- 3) Is there a metallic taste to the water?
- 4) Does a glass of *standing* water appear cloudy or show sediment?

If the answer to any question is yes, your water may contain other corrosion-related compounds. You should consider expanding the list of test compounds at *some of the sample sites* to include cadmium, copper, iron or manganese.

Initial sampling protocol for all drinking water outlets

Your responses to the self-assessment indicate a moderate to high risk of lead contamination in your school drinking water. This may reflect obvious signs the water in your building is corrosive, that past sampling results showed elevated lead or copper levels, or that historical data for the school is missing or potentially inaccurate. For that reason, we recommend you sample all the outlets in your building that could be used for drinking water.

You should include:

- All fountains, coolers and bubblers readily accessible to students (particularly the youngest students).
- At least one sample from each area used for food preparation.
- Other faucets or outlets regularly used to gather drinking or cooking water.

You do not need to include:

- Faucets and outlets used for cleaning, maintenance or other non-consumptive uses.
- Lab, washroom, art room and shop outlets.
- Irrigation outlets.

The U.S. Environmental Protection Agency (EPA) recommends sampling every water tap that could be used for drinking or cooking, and that any tap with more than 20 parts per billion (0.020 mg/L) of lead be retested. EPA's guidance on developing a sampling plan and how to collect samples from various types of outlets is in **3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance** (See **Resources** on page 8.)

Develop a sampling plan

It is critical that your sampling plan follows EPA's guidance. It should identify possible sample sites and a way to select actual sample sites using your assessment of conditions in the school.

You may choose not to sample all faucets and fountains, but should include those that are most accessible to children. Your sampling plan should also include at least one water tap used for food preparation. If you have multiple food-preparation locations take at least one sample from each location.

As you develop your sampling plan, evaluate the need to test for other compounds. The self-assessment focuses on lead because it poses the highest risk for young children. However, other compounds could cause water quality issues at your school.

Answer the following questions:

- 1) Do any outlets or faucets in the building get green, orange or brown stains?
- 2) Have there been complaints about taste, odor, or color?
- 3) Is there a metallic taste to the water?
- 4) Does a glass of *standing* water appear cloudy or show sediment?

If you answer yes to any question, your water may contain other corrosion-related compounds. You should consider expanding the list of test compounds at *some of the sample sites* to include cadmium, copper, iron or manganese.

Resources

3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance (816-B-05-008) – U.S. Environmental Protection Agency, December 2005. EPA developed the 3Ts (Training, Testing and Telling) to help schools implement simple strategies for managing the health risks of lead in schools and drinking water. It is online at

http://www.epa.gov/safewater/schools/pdfs/lead/toolkit_leadschools_guide_3ts_leadschools.pdf

Testing for lead in school drinking water systems (DOH PUB # 331-261) – A step-by-step brochure to help you collect initial and follow-up samples based on EPA's guidance is on the Office of Drinking Water Web site at http://www.doh.wa.gov/ehp/dw/Publications/331-261_testing_for_lead_in_school_drinking_water_systems.htm

EPA's Web site has a one-stop source of information on drinking water quality in schools and childcare facilities. It includes technical guidance and tools, information on laws and rules, and the health effects of lead exposure. It is online at <http://www.epa.gov/OGWDW/schools/index.html>

For more information, call Derrick Dennis, Lead and Copper Program Manager, at (360) 236-3122 or e-mail derrick.dennis@doh.wa.gov



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